Faculty of Sciences

| MAT1322 | Measure theory |

[22.5h+15h exercises] 3 credits

This course is taught in the 1st semester

Teacher(s):   Camille Debiève
Language: French
Level: First cycle

Aims

The objective of the course is to introduce the notion of abstract measure space and the corresponding Lebesgue integral, then to rediscover, in this new language, the convergence theorems introduced in the first analysis courses : Fatou's lemma, Lebesgue dominated convergence, etc. After this course, students will be able to use those new tools in the context of the analysis and probability courses.

Main themes

Borel-Sieltjes measures.
Measurable functions
Integrability and integrals
Convergence theorems
Radon-Nikodym theorem
Fubini theorem
Lp spaces and their dual
Representation theorem of Riesz-Markov.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisite : MAT 1221: Mathematical analysis 3

Other credits in programs

FSA13BA	Troisième année de bachelier en sciences de l'ingénieur, orientation ingénieur civil	(3 credits)	
MATH13BA	Troisième année de bachelier en sciences mathématiques	(3 credits)	Mandatory
STAT3DA/M	Diplôme d'études approfondies en statistique (méthodologie de la statistique)	(3 credits)	